CLAIMS

1. An aromatic polyamic acid comprising a structural unit represented by the following general formula (1)

where Ar₁ represents a tetravalent organic group having one or more aromatic rings and R represents a hydrocarbon group having 2 to 6 carbon atoms.

An aromatic polyamic acid according to claim 1, comprising:
 the structural unit represented by the general formula (1); and
 a structural unit represented by the following general formula (2):

$$\begin{bmatrix}
O & O \\
HO-C & C-OH \\
-N-C & C-N-Ar_4 \\
I & I & I \\
H & O & O & H
\end{bmatrix}$$
(2)

where Ar₃ represents a tetravalent organic group having one or more aromatic rings and Ar₄ represents a divalent organic group having one or more aromatic rings, the structural unit represented by the general formula (2) being never identical to the structural unit represented by the general formula (1),

wherein:

an abundance of the structural unit represented by the general formula (1) is

in a range of from 10 to 90 mol%; and

an abundance of the structural unit represented by the general formula (2) is in a range of from 0 to 90 mol%.

3. An aromatic polyimide comprising a structural unit represented by the following general formula (3):

where Ar₁ represents a tetravalent organic group having one or more aromatic rings and R represents a hydrocarbon group having 2 to 6 carbon atoms.

4. An aromatic polyimide according to claim 3, comprising: the structural unit represented by the general formula (3); and a structural unit represented by the following general formula (4):

where Ar₃ represents a tetravalent organic group having one or more aromatic rings and Ar₄ represents a divalent organic group having one or more aromatic rings, the structural unit represented by the general formula (4) being never identical to the structural unit represented by the general formula (3),

wherein:

an abundance of the structural unit represented by the general formula (3) is in a range of from 10 to 90 mol%; and

an abundance of the structural unit represented by the general formula (4) is in a range of from 0 to 90 mol%.

- 5. An aromatic polyimide according to claim 3 or 4, wherein at least part of each of Ar₁ and Ar₃ in the general formula (3) and the general formula (4) comprises at least one kind of an aromatic tetracarboxylic acid residue selected from the group consisting of pyromellitic dianhydride, 3,3',4,4'-biphenyltetracarboxylic dianhydride, naphthalene-2,3,6,7-tetracarboxylic dianhydride, naphthalene-1,4,5,8-tetracarboxylic dianhydride, 3,3",4,4"-p-terphenyltetracarboxylic dianhydride, 4,4'-oxydiphthalic dianhydride, 3,3'4,4'-benzophenonetetracarboxylic dianhydride, and bis(2,3-dicarboxyphenyl)sulfonic dianhydride.
- 6. An aromatic polyimide according to claim 3 or 4, which has an elastic modulus at 23°C of 2 to 10 GPa, a coefficient of moisture absorption of 1.0 wt% or less, a coefficient of humidity expansion at 0 to 50%RH of 10 ppm/%RH or less, and a coefficient of thermal expansion of 25 ppm/°C or less.
- 7. A method of producing the aromatic polyimide according to claim 3 or 4, comprising imidating the aromatic polyamic acid according to claim 1 or 2.